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# CONTENTS

Volume 45, No. 2 • March/April 2010

## Columns

From the Top . . . . . 7
Government efforts to create demand are creating opportunity as well.

Education . . . . . 8
Early results from our technician survey offer surprising insight.

Codes & Standards . . . . . 10
China is the new ISO/TC70 Chairman.

Editorial . . . . . 12
Guest columnist Allen Schaeffer, Executive Director of the Diesel Technology Forum, discusses how clean diesel technology is helping the nation.

## Features

Beyond the Call . . . . . 14
An innovative trigeneration system helps a pharmaceutical company meet and exceed its emission reduction goals.

EPA Finalizes Fuel Rules . . . . . 19
The EPA has finalized regulations for the National Renewable Fuel Standard.

The Depco Way . . . . . 26
Depco shows how maintaining its mission has led to new opportunities. This is the first in a series of articles profiling EGSA Member firms.

Controlling Paralleling Generators . . . . . 32
Today's modern control systems greatly reduce frequency and voltage variations while safeguarding equipment and cutting costs.

## Departments

Opportunities Calendar . . . . . 5
Association and industry events.

Index of Advertisers . . . . . 6
Who's who in this issue of *Powerline*.

Association News . . . . . 20
Updates from EGSA.

Job Bank . . . . . 30
Looking for a new job?

EGSA Membership Application . . . . . 33
It pays to be a member of EGSA!

Industry News . . . . . 35
The latest reports.

*Innovative design allowed this trigeneration system to go above and beyond the call of duty in reducing emissions and cutting costs; page 14.*

*By staying true to its company philosophy, goals and mission, this EGSA Member Distributor/Dealer was able to weather the recent recession with no staff reductions and find new opportunities; page 26.*

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Consult our online calendar at *www.EGSA.org* for the very latest industry and association events information. *EGSA Members*: To list your meetings here, email your info to *D.Ferreira@EGSA.org*

## Conferences

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**Advanced Schools**

San Antonio, TX ..... August 9-12, 2010

# ADVERTISERS INDEX


Altronic, LLC . . . . . 23
Anna, Inc. . . . . 12
ASCO Power Technologies . . . . . 40
Avtron Mfg. . . . . 12
Baldor Electric Company. . . . . 39
Basler . . . . . 17
ComRent International . . . . . 11
Davidson Sales . . . . . 13, 27
Diesel Gas & Turbine Publications . . . . . 22
DEIF`, Inc. . . . . 24
Eaton Corporation. . . . . 4
Enercon Engineering, Inc. . . . . 2
Flight Systems . . . . . 29
General Industries. . . . . 16
Generator Solutions. . . . . 8
Hotstart. . . . . 18
JRS Custom Fabrication, Inc. . . . . 10
Mid-America Engine . . . . . 27
Miratech . . . . . 9
MTS Power Products. . . . . 25
Phoenix Products . . . . . 28
Pritchard Brown, LLC . . . . . 11
Ring Power . . . . . 20
Robinson Custom Enclosures . . . . . 21
Russelectric, Inc. . . . . 15
Showmen Supplies Inc. . . . . 21
Wabash Power Equipment Co. . . . . 35
Wexler CSD Ltd. . . . . 29



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# Creating Demand and Opportunity

While analysts tell us that the recession ended some time last year, it's still a little difficult to see a difference. Foreclosures are still occurring at record rates, banks continue to post record losses, and unemployment in some states still hovers above 10 percent. One wonders: outside of last year's stimulus funding packages, what is the government doing to spur the economy into full-fledged recovery?

When you take a closer look at the American Recovery and Reinvestment Act (ARRA), it becomes apparent that the government has identified a number of key issues and developed a methodology for addressing all of them at once. In short, it is creating opportunities by creating demand.

For the most part, ARRA funded government projects that were put out for bid with certain requirements. For example, let's say the project in question is a diesel engine retrofit for an aging emergency power system at a local postal service distribution center. To win the award, our project must meet the government's simultaneous goals of hiring locally unemployed workers, reducing emissions and increasing energy efficiency. This methodology kickstarts the business cycle by creating the initial business opportunity and giving participants enough momentum to continue with further, similar action (albeit without government funding).

Government is creating demand through regulations and mandates as well. For example, in 2004, Pennsylvania Governor Ed Rendell signed the Alternative Energy Portfolio Standard (AEPS) into law. Under the standard, two types of qualified power sources must account for 18.5% of the state's electrical generation portfolio by 2020. Type 1 sources must account for 8% of the portfolio. These include wind, solar, coalmine methane, small hydropower, geothermal and biomass. An additional 0.5% must come from solar power generation by 2020. The remaining 10% of the portfolio must come from Type 2 sources, which include waste coal, demand side management, large hydropower, municipal solid waste and coal integrated gasification combined cycle.

New legislation in the Pennsylvania House aims to increase Type 1 source requirements to 15% by 2024 and boost the solar mandate to 3% of the portfolio. Proponents of the increase say the standard has enabled the state to create thousands of alternative energy jobs. Opponents worry that electricity rates will increase and further weaken the state economy, already rattled by high unemployment.

Rendell has countered by pointing out that alternative energy investors may well go elsewhere. While Pennsylvania's AEPS was ambitious when first passed, other states have surpassed it and left the state at a competitive disadvantage. In fact, Maryland's standard calls for 20% renewables by 2022 and New Jersey's standard calls for 22.5% renewables by 2021. In short, all three states have taken the federal government's lead and created methodologies for creating demand which they hope will result in new jobs, reduced emissions and increased energy efficiency.

## Diesel Opportunities, Too

Demand creation is not limited to alternative technologies. Recent EPA rulings are having a definite impact on the manufacture, service and operation of on-site power equipment, particularly diesel gen-sets. Under last year's stimulus funding, the EPA's Diesel Emissions Reduction Act (DERA) program received over $300 million to retrofit diesel engines primarily found in the traditional bus, truck and construction equipment sectors. More importantly, it gave the program—and its underlying clean diesel philosophy—exposure and momentum. As a result, efforts to retrofit stationary diesel engines are now rapidly turning into business opportunities for Distributor/Dealers who position themselves to service this niche market.

According to Diesel Technology Forum, new DERA funding will be coming later this year. Requests for Proposals (RFPs) to apply for FY2011 funds should come out in late summer/early fall. While the exact amount has not been determined yet, President Obama made a budget request for $60 million and that amount is likely to be increased.

The only stipulation for DERA is that the retrofit technology used must be EPA or CARB (California Air Resourced Board) verified. At this time, Selective Catalytic Reduction (SCR) technologies have not been verified. However, some SCR retrofits are currently going through the verification process and have been included on the EPA's emerging technology list which makes them eligible for funding under the DERA emerging technologies grant. Funding for this sector is not as large, but opportunities still exist because competition for the funds is very weak.

Other factors are driving efforts to retrofit existing stationary diesel engines. If you consider that the EPA is using the National Renewable Fuel Standard to mandate changes in how we fuel power generation equipment and issuing final rulings to reduce air toxics from existing stationary diesel

*Continued on page 20*

*George Rowley*
*EGSA Director*
*of Education*
*G.Rowley@EGSA.org*

# Technician Survey Response Rate Reflects Confidence and Support

I am very pleased to report that 11 technicians passed the EGSA Certification test in January and joined the elite ranks of EGSA Certified Generator Systems Technicians. There are now 336 EGSA Certified Technicians servicing and maintaining On-Site Power Generating Equipment throughout North America and the Caribbean.

## Technician Survey Completed

We have just finished surveying technicians who took the EGSA Certification test in 2009, and we are extremely pleased by the number and quality of responses. A total of 109 techs took the test in 2009, and all were invited to participate in the survey. It is evident that placing the survey online played a large role in producing such good results. While few techs returned a hard copy of the test, 57% of the techs who passed the test and 46% of those who did not pass participated in the online version of our survey.

We feel that this incredibly strong response rate shows the level of confidence technicians have in the program and demonstrates just how much they support it. We're especially pleased that so many who did not pass the test took the time and effort to respond to the survey as well.

We asked techs to rank items, comment on the Certification Program and share their opinion of the overall process. We also asked for suggestions on how we can improve the program. In addition, 16 techs who passed the test agreed to provide us with testimonials for use in promoting and marketing the program. Sorting and compiling the data for analysis and presentation will take some time, but we can share some preliminary results. The charts on the opposite page show how techs who passed the test responded to selected questions and/or statements and how those who did not pass the test responded to many of those same questions and/or statements.

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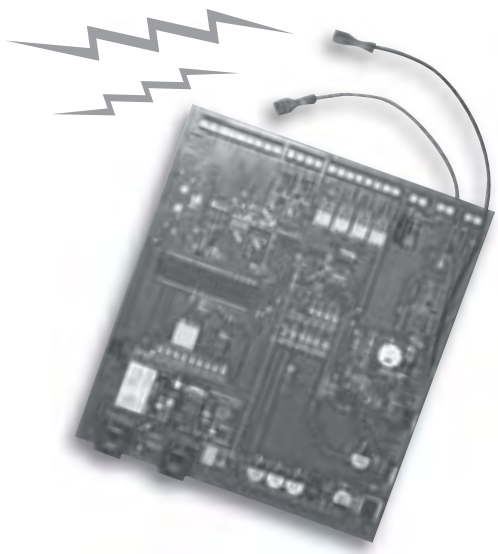

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| Selected Generator Technician Survey Results from Techs who passed the test and were subsequently Certified | Responded: "I Agree" |
|---|---|
| "I used the Study Guide to prepare for the test…" | 85.7% |
| "…and I found the Guide useful in preparing for the test." | 86.7% |
| "I used the *On-Site Power Reference Book* to prepare for the test…" | 62.9% |
| "…and I found the Book useful in preparing for the test." | 77.7% |
| "In terms of difficulty, the test was about right." | 74.3% |
| "The test is a fair measure of my knowledge and skill." | 82.4% |
| "The test reflects the knowledge needed by a Certified Technician." | 88.6% |
| "I plan to maintain my EGSA Certification." | 92.6% |
| "I am very satisfied with the EGSA Certification Program." | 88.6% |
| Average wait for testing results. | 2.8 Weeks |

| Selected Generator Technician Survey Results from Techs who did NOT pass the test and were NOT Certified | Responded: "I Agree" |
|---|---|
| "I used the Study Guide to prepare for the test…" | 83.3% |
| "…and I found the Guide useful in preparing for the test." | 40% |
| "I used the *On-Site Power Reference Book* to prepare for the test…" | 83.3% |
| "…and I found the *Book* useful in preparing for the test." *Note: 80% had no opinion; 20% disagreed with the statement.* | 0% |
| "I felt the test was too difficult." | 100% |
| "The test reflects the knowledge needed by a Certified Technician." *Note: 60% had no opinion; 20% disagreed with the statement.* | 20% |
| "I plan to take the test again." | 100% |
| Average wait for testing results. | 2.8 Weeks |

## Education Committee to Meet

If you missed my last column, the delivery of "education" is presently undergoing expansive, rapid change. Known as e-learning or on-line learning, the electronic delivery of education is here to stay—and it's going to get a lot bigger and better. (For our purposes, we consider e-learning as a learning experience that occurs at the computer and over the Internet.)

As you should already know, the EGSA Annual Spring Convention is fast approaching. I hope that each of you has already registered for the event and that you plan to attend the Education Committee meeting where Bill Heacock, EGSA's expert Education Consultant, will explain the concept of e-learning in greater detail. Please attend and participate in this important discussion exploring how EGSA could potentially deliver selected education programs to members and the industry electronically. The Education Committee is just beginning to investigate the pros and cons of e-learning, and we are eagerly interestested in your experiences, opinions and ideas. I hope to see you there.

If you have questions or comments about EGSA Education programs, please contact George Rowley, EGSA Director of Education via e-mail at *G.Rowley@EGSA.org* or call 561-237-5557. ■


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# China Takes Over ISO/TC70 Chairmanship from the UK

*Herb Whittall*
*EGSA Technical Advisor*
*HWhittall@comcast.net*

China is again flexing its muscles and showing its progressive side to the world. In 2009, the UK passed the Chairmanship and Secretariat of ISO/TC70 – *Internal Combustion Engines* to China. The technical committee is responsible for several standards that concern EGSA members, including ISO 8528 – *Reciprocating Internal Combustion Engine driven alternating current generating sets*. Two projects have been started under ISO TC/70: *Safety requirements for diesel engines in large yachts over 24 meters (78 feet) for sport and pleasure*; and *Measurement procedures for exhaust silencers of internal combustion engines*. If you have special interest in the second project, I have a 9-page Technical Detail document I can email you upon request.

In December, the National Electric Code (NEC) panels met to review the Report on Comments for the 2011 Edition. Herb Daugherty* and I attended that meeting as members of Panel 13, which covers articles 445 Generators, 480 Storage batteries, 695 Fire Pumps, 700 Emergency Systems, 701 Legally Required Standby Systems, 702 Optional Standby Systems and 708 Critical Operations Power Systems. Article 708 was new in the 2008 edition of the NEC at the request of Homeland Security. There were 188 comments submitted to NFPA for Panel 13, but two items had multiple comments. Article 445.20 which covers the requirement for GFCI outlets on portable generator sets had 48 comments; Selective Coordination had 28 comments in Articles 700, 701 and 708.

Article 445.20 had approved the requirement for GFCI outlets on portable generator sets (below 15 kW) in the Proposal Meeting in January, 2009. However, it was rejected in this meeting. I don't know how this change will fare with the Technical Correlating Committee and the vote of the NFPA convention. A meeting at UL in Chicago has been scheduled for March 2-3 to try and resolve this problem as it concerns UL 2201 *Standard for Portable Generator Sets*. This has been a stumbling block to getting consensus on UL 2201. Other

items to be discussed in Chicago include: Muffler After Fire Test; Backfire Deflector Test; Reverse Polarity Test (for units with direct current output); Ratings (what items need to be shown); and Tanks and Pumps (a discussion item). Selective Coordination was left "as is" by approximately the same number of votes as in the Proposal meeting.

The NFPA 99 Committee met in late January this year to re-visit the 2009 ROP (Report on Proposals) meeting and, for all intents and purposes, start from scratch. The standard was sent back to committee because of administrative errors in the Electrical Systems (ELS) section and others, including Medical Gas Systems. The proposals under review—several hundred in all—were the same as those reviewed at the ROP meeting in January, 2009. Many involved "wet process" locations, the number of receptacles in patient care areas and communication systems.

The removal of the term "Emergency System" from the standard was of particular note. This was done to avoid confusion with "Emergency System" as defined in NFPA 70, Article 700. Now, Health Care Facilities will have an "Essential Electrical System" made up of Life Safety, Critical and Equipment Branches. The subject of Selective Coordination turned out to be one of the most debated items just as it was at the cmp 13 meeting. Unlike the action taken at the cmp 13 meeting, however, the NFPA 99 committee voted to require Selective Coordination only down to 0.1 second and substantiated the requirement on the basis that there were other factors involved with the safety and reliability of an electrical system and the consulting engineer should be given leeway in system design. The closing date for comments is September 3, 2010. The ROC meeting has been tentatively set for October 6-8, 2010.

## NFPA 70 Committee Meets

The NFPA 70 *Electrical Safety in the Workplace* committee met February 8-12 in Memphis. Normally this would be the ROP meeting where the committee reviews all the proposals submitted by the pubic requesting changes. However, according to an article in the NFPA *Journal*, it appears that Committee Chair David Dini has formed task groups to look at specific areas for possible needed revision. To see what changes have been proposed, look for the 70E Report On Proposals in June 2010.

## Odds and Ends

UL 1236 *Battery Chargers for Charging Engine Starter Batteries*, 7th edition has been published.

If you are considering expanding into the sales and installation of solar power equipment but lack an equipment source and/or training, please e-mail me for assistance at *HWhittall@comcast.net*. ■

**Editor's note: Past President and longtime EGSA Member Herb Daugherty serves as EGSA's alternate representative on a number of codes and standards panels, including NEC 13 and NFPA 70.*

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# Clean Diesel Technology Helps Meet Ozone Clean Air Standards

*Allen Schaeffer*
*Executive Director*
*Diesel Technology Forum*

The U.S. Environmental Protection Agency (EPA) recently held its first public hearing on proposed revisions to the National Ambient Air Quality Standards for Ozone.

While the merits of reducing the allowable levels of ozone in the atmosphere are now subject to considerable debate, there is no debate about the progress of clean diesel technology and its importance in meeting the nation's clean air goals. Clean diesel—the combination of cleaner diesel fuel along with advanced clean-burning diesel engines and emissions control technology—is already at work in key sectors and reducing emissions of both particulate matter (PM) and nitrogen oxides (NOx), an ozone precursor. From 2007 to 2009, new heavy-duty commercial trucks, for example. reduced PM levels by over 98 percent, and NOx by about 50 percent. New commercial trucks being sold today are at near-zero emissions for PM and also for NOx (0.02 grams per brake-horsepower-hour)—an additional 50 percent reduction from 2007 levels.

Low-emissions clean diesel technology is not limited to new commercial highway trucks. Today's clean diesel cars now meet the same emission certification standards as gasoline vehicles while getting 20-40 percent better fuel economy. New construction and farm equipment, marine boats, locomotives and diesel generator sets are on track to reduce emissions levels of NOx and PM to nearly the same levels as highway vehicles by 2014. An important first step will take place on June 1, 2010 when off-road diesel-engine machines and equipment begin using ultra-low sulfur diesel fuel—a change highway vehicles made in 2006.

The progress being made in reducing ozone precursors (NOx) is not limited to new technology, either. Clean diesel industry leaders are also meeting the emissions challenge at the other end by demonstrating their ability to retrofit existing diesel-engine machines and equipment to yield lower NOx and PM. By replacing outmoded engines with newer models, upgrading existing diesel engine components or adding emissions control devices, everything from school buses to standby generators and construction equipment can lower emissions by as much as 90 percent from original performance levels in some cases. ■

## About the Author

Allen Schaeffer is the Executive Director of Diesel Technology Forum, a non-profit national organization dedicated to raising awareness about the importance of diesel engines, fuel and technology, working with policymakers and other stakeholders on common solutions. Forum members are leaders in clean diesel technology and represent the three key elements of the modern clean-diesel system: advanced engines, vehicles and equipment, cleaner diesel fuel and emissions-control systems. For more information, visit their web site at *www.dieselforum.org*.

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# Beyond The Call

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Aircogen CHP Solutions, a Dresser-Rand strategic business unit, provides a complete range of fully packaged and tested combined heat and power (CHP) systems to commercial, industrial, and municipal energy users worldwide. Recently, the company designed and installed a CHP system for Transform Pharmaceuticals, a Johnson & Johnson company in Lexington, MA, and the first year of operation has shown impressive results.

CHP systems produce more usable energy through the highly efficient production of power, heating and cooling with less impact on the global environment than using electric power delivered from a central power station thanks to a dramatic net decrease in global greenhouse gas (GHG) emissions.

Transform Pharmaceuticals has a corporate mandate to reduce its energy costs and greenhouse emissions by seven percent in 2010, and through its partnership with Aircogen, the company's 250kW solar thermal-assisted trigeneration system exceeds this goal.

When the system was installed, Massachusetts Governor Deval Patrick commended Johnson & Johnson on its commitment to saving energy and contributing to the local economy, and to the project partners for supporting the state's green energy initiative.

More recently, Transform Pharmaceuticals was one of 10 organizations honored as a "Northeast Business Leader for Energy Efficiency" by Northeast Energy Efficiency Partnerships (NEEP).

It was nominated by National Grid and selected for recognition based upon several factors: its commitment to achieving energy savings through cost-effective energy efficiency investments; addressing comprehensive changes in major energy systems; improving energy performance through operational practices and management level support; and demonstrating leadership to advance energy efficiency.

In combination with the renewable solar thermal energy, the system is generating approximately $220,000 in energy savings each year. Operating at approximately 80 percent efficiency, the system compares favorably to grid power that can be as low as 35 percent efficient at the generation point, with an additional efficiency loss of seven to nine percent in the transmission and distribution system.

In August 2009, the trigeneration system completed its first full year of operation. The system achieved an operational availability of 97 percent at full load with an average operating efficiency of 78 percent, delivering 2098 MWhrs of electricity and recovering 5280 MWhrs of useful thermal energy.

"This project demonstrates how the correct application of a packaged trigeneration system can help corporate America deliver

# The new RUSSELECTRIC 30-CYCLE TRANSFER SWITCHES...

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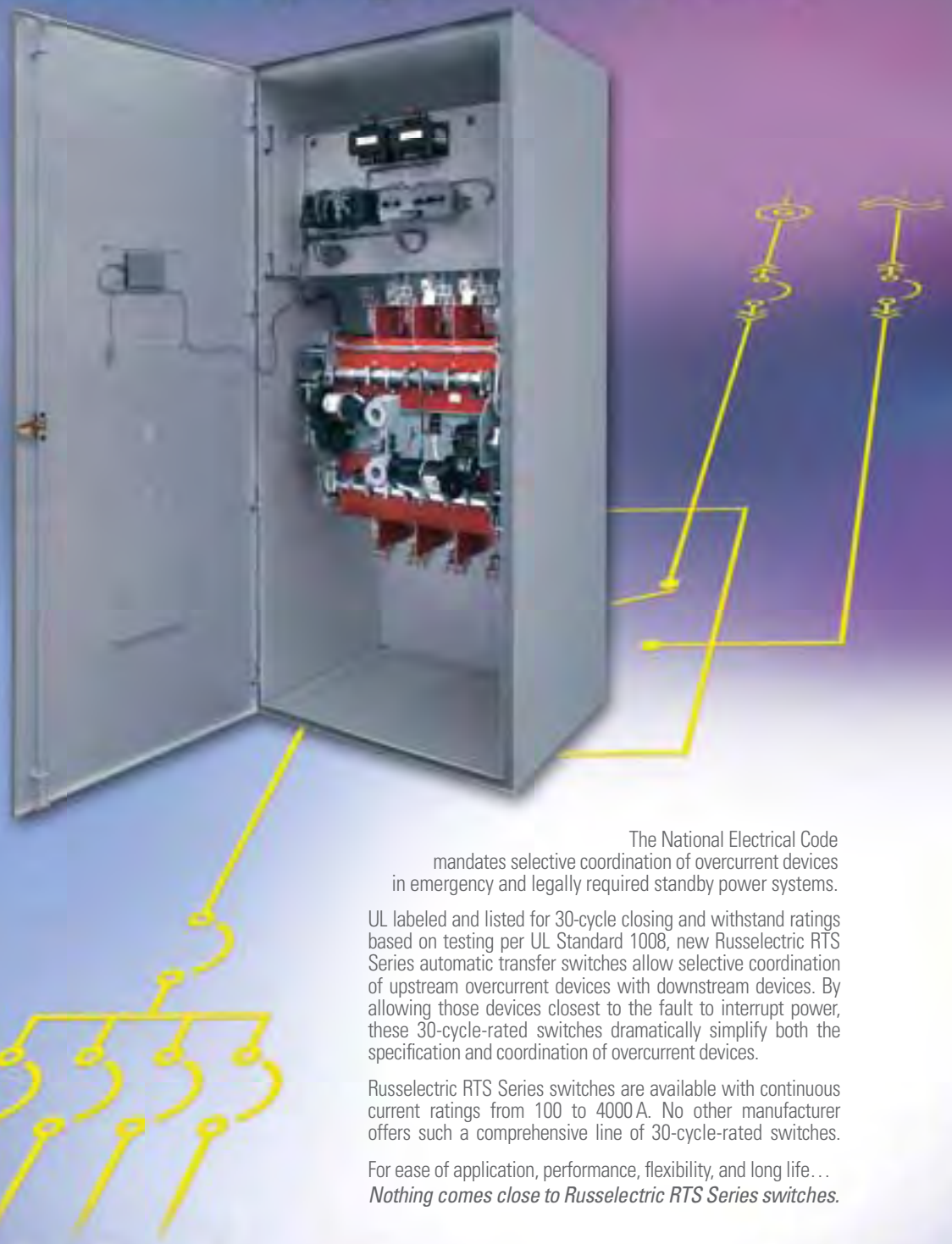

The National Electrical Code mandates selective coordination of overcurrent devices in emergency and legally required standby power systems.

UL labeled and listed for 30-cycle closing and withstand ratings based on testing per UL Standard 1008, new Russelectric RTS Series automatic transfer switches allow selective coordination of upstream overcurrent devices with downstream devices. By allowing those devices closest to the fault to interrupt power, these 30-cycle-rated switches dramatically simplify both the specification and coordination of overcurrent devices.

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on its carbon reduction promises while delivering energy savings and improving competitiveness," said Ian Hopkins, general manager of the Aircogen operations based in the United States. "Now more than ever it's important that industrial energy users maximize their fuel efficiency. One way to do this is through this type of distributed generation."

A CHP, or cogeneration system, offers an environmentally friendly option for providing power and energy where it's needed through the simultaneous generation of usable heat and electricity.

As opposed to cogeneration, which deals only with power and heat, trigeneration is the simultaneous production of power, heat, and cooling. The chiller is assembled with all necessary pumps, heat exchangers, and controls in an engineered package of the same construction as the matched CHP unit. Cooling of the absorption chiller package and engine system is provided by a separate, closed circuit cooling water system controlled by the integrated trigeneration control system.

Aircogen designed the trigeneration systems to precisely match Transform Pharmaceuticals' requirements for electricity, heating and cooling. The system's performance was further supplemented by a solar thermal array that delivers additional heat to the system's primary hot water circuit for transfer to either the heating or cooling demand of the facility.

**"The correct application of a packaged trigeneration system can help corporate America deliver on its carbon reduction promises while delivering energy savings and improving competitiveness."**

Transform's 250kW unit provides continuous, on-site-generated electricity, heating, and cooling to its manufacturing facility from a single, natural gas fuel source. The unit is capable of delivering 1.3 million BTUs of hot water at 180 degrees Fahrenheit or up to 75 tons of chilled water via an absorption chiller. These outputs provide approximately 29 percent of the site's cooling demand and 38 percent of its hot water demand on a typical design day.

During the same period, it is estimated that it will reduce the site's carbon footprint by nearly 1000 tons. The unit is fueled by clean natural gas and uses a catalytic converter system to achieve emission levels well within EPA guidelines (NOx <0.1 g/bhp.hr and COd<0.6g/bhp.hr).

Aircogen recently secured an order to supply a 555kWe solar thermal trigeneration system to Boston Scientific in Marlborough, MA. The unit is scheduled for delivery in the second quarter of 2010.

Dresser-Rand supplies rotating equipment solutions to the worldwide oil, gas, petrochemical, and process industries. The company operates manufacturing facilities in the U.S., France, Germany, Norway, U.K., China and India, and maintains a network of 35 service and support centers covering more than 140 countries. ■

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**BE1-11*f***
Feeder Protection System

**BE1-11*g***
Generator Protection System

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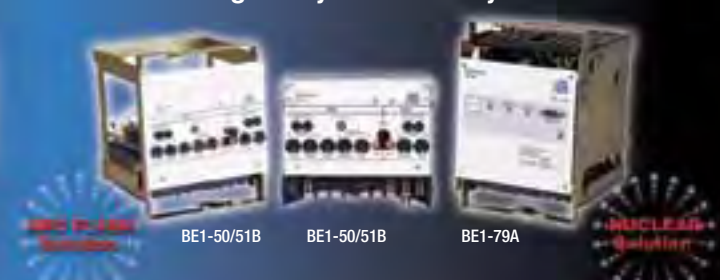

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# EPA Finalizes Regulations for the National Renewable Fuel Standard Program for 2010 and Beyond

*Editor's note: While this ruling is being applied to transportation fuel and diesel engine vehicles, it is important to bear in mind that the EPA has a history of issuing mandates for on-road diesel engines and, after a certain period, applying them to off-road diesel engines, including stationary diesel engine gensets. In any case, the ruling affects all equipment that currently use diesel and gasoline "transportation fuels."*

The U.S. Environmental Protection Agency (EPA) has announced it is finalizing revisions to the national Renewable Fuel Standard (RFS) program. This rule makes changes to the Renewable Fuel Standard program as required by the Energy Independence and Security Act of 2007 (EISA). The revised statutory requirements (referred to as RFS2) establish new specific annual volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be used in transportation fuel. The revised statutory requirements also include new definitions and criteria for both renewable fuels and the feedstocks used to produce them, including new greenhouse gas (GHG) emission thresholds as determined by lifecycle analysis. The regulatory requirements for RFS will apply to domestic and foreign producers and importers of renewable fuel used in the U.S.

**EISA Renewable Fuel Volume Requirements (billion gallons)**

| Year | Cellulosic biofuel requirement | Biomass-based diesel requirement | Total Advanced biofuel requirement | Total renewable fuel requirement |
|---|---|---|---|---|
| 2008 | n/a | n/a | n/a | 9.0 |
| 2009 | n/a | 0.5 | 0.6 | 11.1 |
| 2010 | 0.1 | 0.65 | 0.95 | 12.95 |
| 2011 | 0.25 | 0.80 | 1.35 | 13.95 |
| 2012 | 0.5 | 1.0 | 2.0 | 15.2 |
| 2013 | 1.0 | a | 2.75 | 16.55 |
| 2014 | 1.75 | a | 3.75 | 18.15 |
| 2015 | 3.0 | a | 5.5 | 20.5 |
| 2016 | 4.25 | a | 7.25 | 22.25 |
| 2017 | 5.5 | a | 9.0 | 24.0 |
| 2018 | 7.0 | a | 11.0 | 26.0 |
| 2019 | 8.5 | a | 13.0 | 28.0 |
| 2020 | 10.5 | a | 15.0 | 30.0 |
| 2021 | 13.5 | a | 18.0 | 33.0 |
| 2022 | 16.0 | a | 21.0 | 36.0 |
| 2023+ | b | b | b | b |

[a]*To be determined by the EPA through a future rulemaking, but no less than 1.0 billion gallons.*
[b]*To be determined by the EPA through a future rulemaking.*

## Key Actions

This final action lays the foundation for achieving significant reductions of greenhouse gas emissions from the use of renewable fuels, reductions of imported petroleum and further development and expansion of our nation's renewable fuels sector.

This action is also setting the 2010 RFS volume standard at 12.95 billion gallons (bg). Further, for the first time, the EPA is setting volume standards for specific categories of renewable fuels including cellulosic, biomass-based diesel, and total advanced renewable fuels. For 2010, the cellulosic standard is being set at 6.5 million gallons (mg); the biomass-based diesel standard is being set at 1.15 bg, (combining the 2009 and 2010 standards as proposed).

In order to qualify for these new volume categories, fuels must demonstrate that they meet certain minimum greenhouse gas reduction standards, based on a lifecycle assessment, in comparison to the petroleum fuels they displace.

For its final determinations, the EPA is using the best available models and has incorporated updated information based on:

- significant new scientific data available to the agency;
- rigorous independent peer review;
- extensive public comments.

For the fuel pathways modeled, the following meet or exceed the respective required minimum GHG reduction standards:

- corn-based ethanol plants using new efficient technologies;
- soy-based biodiesel;
- biodiesel made from waste grease, oils, and fats;
- sugarcane based ethanol.

Fuels derived from cellulosic materials meet, and generally significantly exceed, the minimum GHG reduction standard.

Additional information on these and other key changes can be found below.

## New Renewable Volume Standards

This final rule (RFS2) revises the annual renewable fuel standards and makes the necessary program modifications as set forth in EISA. Of these modifications, several are notable. First, the required renewable fuel volume continues to increase under RFS2, reaching 36 bg by 2022. The chart above shows the EISE volume requirements.

*Continued on page 22*

*Continued from page 7*

engines, you can see that it is simultaneously creating a demand for retrofit technology and services. That demand rapidly translates into business opportunities for the replacement of engine components and the addition of emissions controls to bring existing power generation equipment into compliance.

Don't forget in-use emissions testing, either. The November issue of *Diesel Progress North America* contains an article concerning in-use emissions testing that you may find of interest. While on-road, heavy-duty diesel engine manufacturers have been using in-use testing for the past two years, manufacturers of other engine types are just getting started. This is an area ripe with business opportunities.

Yes, the recession is over. Yes, the recovery is at hand; and, yes, there are opportunities for your business to grow and expand in the coming months. Like anything worth waiting for, it's just going to take a little time. I suggest you use that time to make sure your company is prepared for the moment the recovery arrives in full force. Stay informed and watch for opportunity! ■

# EGSA NEWS

## DynaGen Seeks New Distributors

EGSA Manufacturer Member DynaGen Technologies has announced it is actively seeking new distributors. The Canadian-based firm manufactures power control and monitoring solutions for the on-site power marketing, including diesel and gas engine controllers, genset control panels, and automatic transfer switches.

DynaGen plans to extend its existing distribution network by adding new distributors in key regions of the U.S. and Canada.

"DynaGen has experienced significant growth over the past year and requires more 'boots on the ground' to assure our distributor network is ready for the next step," said Paul Wareham, DynaGen Director of Business Development. "We're expanding our geographic coverage in area of the US and Canada in the form of stocking and non-stocking distributorships. We recognize that regional distributors have the local industry knowledge and technical expertise to provide improved service to gen-set dealers, contractors, installers and end users."

If you're interested in becoming a distributor for any of DynaGen's product lines, contact Stephen MacNeil, Distribution Sales Manager at 1-(888)-396-2436 ext 7 or e-mail *stevemacneil@dynagen.ca*.

## EGSA Members Approve Measure to Change Bylaws

EGSA Members have overwhelmingly approved a measure to change the Association's nomination and election process as stipulated within the EGSA Bylaws. The changes were made in response to recommendations by an ad hoc committee that recently reviewed EGSA's nomination and election policies and procedures.

## Market Trends Committee Conducts 2010 Pulse Survey

The Market Trends Committee has put the final touches on the 2010 Market Pulse Survey, and EGSA Staff has issued an invitation to EGSA Members to participate.

The semi-annual Market Pulse Survey was launched last year as a way to provide

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EGSA Members with immediate market information. Survey results will be shared wth all EGSA Members, but company-specific information will remain confidential. For more information about the survey, see last year's results as published in the September/October issue of *Powerline*.

## EGSA Committee Meeting to Feature Special Presentation

While all of the Standing EGSA Committees will be focusing on the business of the Association during their upcoming meetings at the Annual Spring Convention, a few of the Committees will be augmenting their sessions with presentations by guest speakers.

Codes & Standards Surveillance Committee Committee Chair John Hawkins, Jr., GTE Industries, will give a special presentation on factors that affect our control of and response to sound and noise. Using handheld sound level meters, John will generate noise at various levels and frequencies to give participants an idea as to what different frequency ranges sound like and how loud different levels can be. The presentation will discuss how sound must have a source, path and receptor and how those three affect our ability to control it. Other topics within the presentation will include: Sound Power vs Sound Pressure; A-Weighting and why it is used; OSHA and FERC Regulations; adding or combining sound levels; human and animal responses; objective and subjective responses to noise; and divergence, air absorption and other factors that may affect sound level at a given point.

The Codes & Standards Surveillance Committee represents EGSA and its members' interests on select national and international industry codes and standards committees. The Committee will meet March 15, 2010 from 1-5 p.m. during the EGSA Annual Spring Convention in Saint Petersburg, FL.

For a complete schedule of Committee Meetings and information on guest presentations, visit *www.EGSA.org/recovery*. ■

## EGSA Certified Technician Counts

As of January 31, 2010, EGSA Certified Technicians may be found in U.S. states, territories, Canada and Trinidad as follows:

| # | State, Territory or Country |
|---|---|
| 26 | GA, OH |
| 24 | VA |
| 21 | MI |
| 20 | CA |
| 19 | FL |
| 18 | Ontario Canada, CT |
| 14 | AZ, PA, TX |
| 13 | NC |
| 11 | NY |
| 10 | MO, IL |
| 8 | NJ, Trinidad |
| 7 | MA, MD |
| 6 | SC |
| 5 | WV |
| 4 | CO, NH, UT |
| 3 | TN, WA |
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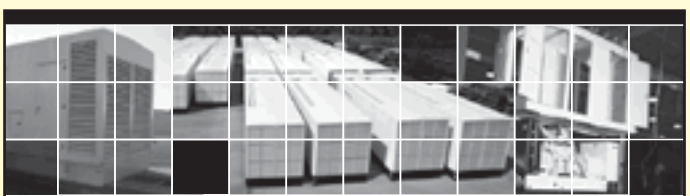

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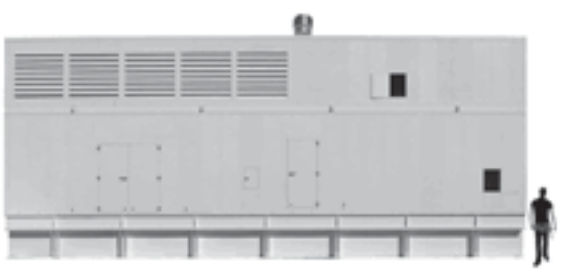

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**Standards for 2010**

| Fuel Category | Percentage of Fuel Required to be Renewable | Volume of Renewable Fuel (in billion gal) |
|---|---|---|
| Cellulosic biofuel | 0.004% | 0.0065 |
| Biomass-based diesel | *1.10% | *1.15 |
| Total Advanced biofuel | 0.61% | 0.95 |
| Renewable fuel | 8.25% | 12.95 |

*Combined 2009/2010 Biomass-Based Diesel Volumes Applied in 2010

## EISA Expands Coverage to Include Diesel and Nonroad Fuels

EISA expanded the RFS program beyond gasoline to generally cover all transportation fuel. This now includes gasoline and diesel fuel intended for use in highway vehicles and engines, and nonroad, locomotive and marine engines. These provisions continue to apply to refiners, blenders, and importers of transportation fuel (with limited flexibilities for small refiners), and their percentage standards apply to the total amount of gasoline and diesel they produce for such use.

## 2010 Standards

For 2010, EISA set a total renewable fuel standard of 12.95 billion gallons. This total volume, presented as a fraction of a refiner's or importer's gasoline and diesel volume, must be renewable fuel. The final 2010 standards are shown in the above chart.

## Setting the 2010 Cellulosic Standard

EISA requires the Administrator to evaluate and make an appropriate market determination for setting the cellulosic standard each year. Based on an updated market analysis considering detailed information from pilot and demonstration scale plants, an Energy Information Administration analysis, and other publicly and privately available market information, we are setting the 2010 cellulosic biofuel standard at 6.5 million ethanol-equivalent gallons. While this volume is significantly less than that set forth in EISA for 2010, a number of companies and projects appear to be poised to expand production over the next several years. Since the cellulosic standard is lower than the level otherwise required by EISA, we will also make cellulosic credits available to obligated parties for end-of-year compliance, should they need them, at a price of $1.56 per gallon (gallon-RIN). In addition, while we have lowered the cellulosic standard below the level otherwise required in the Act, we have maintained the advanced biofuel and total renewable standards as that set in EISA for 2010. We are continuing to assess the growth of the cellulosic biofuel industry and intend to issue a notice of proposed rulemaking (NPRM) each spring and a final rule by November 30 of each year to set the renewable fuel standards for each ensuing year.

*Continued on page 24*

# Proof positive that good things come in small packages

The new GTI A-E13 and A-E14 conversion kits fit inline engines and include these major components:

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*Continued from page 22*

## Treatment of Biomass-based Diesel

This rule revision also includes special provisions to account for the 2009 biomass-based diesel volume requirements in EISA. As described in the final rule, in November 2008 the EPA used the new total renewable fuel volume of 11.1 billion gallons from EISA as the basis for the 2009 total renewable fuel standard issued under the initial RFS regulations. While this approach ensured that the total mandated renewable fuel volume required by EISA for 2009 was used, the RFS1 regulatory structure did not provide a mechanism for implementing the 0.5 billion gallon 2009 requirement for biomass-based diesel. The EPA is addressing this issue in this rule combining the 2010 biomass-based diesel requirement of 0.65 billion gallons with the 2009 biomass-based diesel requirement of 0.5 billion gallons to require that obligated parties meet a combined 2009/2010 requirement of 1.15 billion gallons by the end of the 2010 compliance year.

**Lifecycle GHG Thresholds Specified in EISA**

*(Percent reduction from 2005 baseline)*

| | |
|---|---|
| Renewable fuel[a] | 20% |
| Advanced biofuel | 50% |
| Biomass-based diesel | 50% |
| Cellulosic biofuel | 60% |

[a] The 20% criterion generally applies to renewable fuel from new facilities that commenced construction after December 19, 2007.

## Greenhouse Gas Reduction Thresholds

EISA established new renewable fuel categories and eligibility requirements, including setting the first mandatory GHG reduction thresholds for the various categories of fuels. A significant aspect of the RFS2 program is the requirement that the lifecycle GHG emissions of a qualifying renewable fuel must be less than the lifecycle GHG emissions of the 2005 baseline average gasoline or diesel fuel that it replaces. Four different levels of reductions are required for the four different renewable fuel standards. These lifecycle performance improvement thresholds are listed in the table above.

Compliance with each threshold requires a comprehensive evaluation of renewable fuels, as well as the baseline for gasoline and diesel, on the basis of their lifecycle emissions. As mandated by EISA, the greenhouse gas emissions assessments must evaluate the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions

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such as significant emissions from land use changes) related to the full lifecycle, including all stages of fuel and feedstock production, distribution and use by the ultimate consumer.

The EPA's lifecycle methodology required breaking new scientific ground and using analytical tools in new ways. Throughout the development of the EPA's lifecycle analysis, the Agency employed a collaborative, transparent, and science-based approach. The EPA recognizes that as the state of scientific knowledge continues to evolve in this area, the lifecycle GHG assessments for a variety of fuel pathways are likely to be updated. Therefore, while the EPA is using its current lifecycle assessments to inform the regulatory determinations for fuel pathways in this final rule as required by the statute, the Agency is also committing to further reassess these determinations and lifecycle estimates.

Based on the Agency's current modeling of specific fuel pathways, which incorporated comments received through the third-party peer review process, and data and information from new studies and public comments, the EPA has determined that:

- Ethanol produced from corn starch at a new (or expanded capacity from an existing) natural gas-fired facility using advanced efficient technologies that we expect will be most typical of new production facilities complies with the 20% GHG emission reduction threshold.

*Continued on page 31*

## Overview of Impacts of Increasing Volume Requirements in the RFS2 Program

The increased use of renewable fuels required by the RFS2 standards is expected to reduce dependence on foreign sources of crude oil, increase domestic sources of energy, while at the same time providing important reductions in greenhouse gas emissions that contribute to climate change.

**Petroleum Consumption, Energy Security and Fuel Costs:** The EPA estimates that the increased use of renewable fuels needed to reach the 36 billion gallons mandated by 2022 relative to market projections in the absence of the mandate will displace about 13.6 billion gallons of petroleum-based gasoline and diesel fuel. This represents about 7 percent of expected annual gasoline and diesel consumption in 2022. Furthermore, the rule is expected to decrease oil imports by $41.5 billion, and to result in additional energy security benefits of $2.6 billion. By 2022, the increased use of renewable fuels is expected to decrease gasoline costs by 2.4 cents per gallon and to decrease diesel costs by 12.1 cents per gallon.

**Greenhouse Gas Emissions:** The expanded use of renewable fuels is expected to reduce greenhouse gas emissions by 138 million metric tons when the program is fully implemented in 2022. The reductions would be equivalent to taking about 27 million vehicles off the road.

**Emissions and Air Quality:** The increased use of renewable fuels will also impact emissions. Some hydrocarbon, nitrogen oxide (NOx), acetaldehyde and ethanol emissions are expected to increase. Others, such as carbon monoxide (CO) and benzene, are expected to decrease. However, the impact of these emissions on criteria air pollutants are vary highly from region to region. Overall, the emission changes are projected to lead to increases in population-weighted annual average ambient PM and ozone concentrations, which in turn are anticipated to lead to up to 245 cases of adult premature mortality.

**Agriculture Sector and Related Impacts:** In 2022, the increased use of renewable fuels is expected to expand the market for agricultural products such as corn and soybeans and open new markets for advanced biofuels. We estimate that the RFS2 program would increase net farm income by $13 billion dollars—or more than 36 percent—in 2022. We also expect corn exports to decrease by 8 percent, and soybean exports to decrease by 14 percent. The rule is expected to increase the cost of food $10 per person in 2022.

# The Depco Way

## *Distributor/Dealer Capitalizes on Opportunities By Maintaining Its Mission*

*Depco Power Systems was able to turn a profit and maintain a full complement of staff during the recent recession.*

EGSA Distributor/Dealer Member Depco Power Systems was originally founded in January 1991 by Tim Felty and Dick Davis as Diesel Engine and Parts Company (DEPCO) to provide the power industry with high-quality products and services at a fair price. "We started in the used diesel engine business primarily dealing in Detroit Diesel 2 stroke engines and parts," explains Depco Vice President Tadd Stickler. "Our customers and the market in general have steered us into the power generation business."

Stickler, in fact, joined Depco shortly after its inception as the firm's shop manager and sole mechanic.

Over the past two decades, Depco has leveraged its opportunities to grow into a cutting-edge On-Site Power Distributor/Dealer with an impressive portfolio of diversified product lines. In 1992, for example, Depco got its start in the global marketplace when it formed a relationship with a Chinese genset manufacturer. The resulting boom in business enabled Depco to move to its current Houston facility the following year. The larger quarters allowed them to handle larger equipment with greater efficiency and safety and to start rebuilding engines, expanding packaging capabilities and stocking higher quality used inventory.

In 2000, Depco was the first diesel engine provider to make online inventory available in real time. Depco pioneered the concept of real time as a technology and continues to use it to update its online inventory as soon as it enters the company's facility.

Today, Depco's team buys and sells new, rebuilt, and used generators, engines, marine engines, marine transmissions, power units, transfer switches, and parts, providing its clients around the globe with the resources they need to do business. Product lines include Caterpillar, Cummins, Detroit Diesel, John Deere and, adds Stickler, "MANY other brands!"

The company is based in Houston, TX, close to the Port of Houston. Occupying an entire city block, Depco's three-acre paved facility includes administrative office buildings and 40,000 square feet of warehouse space, including a 12,000 sq. ft. service center served by three overhead cranes. The center includes service bays, a loading dock and forklifts, generator load banks, an engine dynamometer, a cleaning bay and a paint booth. According to Depco President Dick Davis, "The size of our facility allows us to stock a large inventory at all times, and we are able to handle and repair our inventory quickly, safely, and efficiently."

According to Stickler, Depco joined EGSA in 2005 "to be better in tune with the power industry and participate in the training and education programs" available through the Association such as the EGSA Generator Technician Certification Program.

"I think that knowing we have EGSA-Certified Technicians working on our equipment will give our customers additional peace of mind," says Stickler. "I also believe it is going to help boost the morale of our technicians and give them that much more confidence in their abilities. Advertising that we have certified technicians will definitely be good for business."

As the firm's "EGSA Guy," Stickler has made a point of being personally involved

and active in the Association "to promote our company and encourage our employees to network at EGSA functions."

Depco routinely sends its employees to attend EGSA Conventions and Conferences because, said Stickler, "We find the conventions very beneficial for discovering new products and vendors. They're also an excellent source of networking."

Despite nearly 20 years of growth and change, the company's mission, says Stickler, has been the same since day one. "As we have grown, our primary goal remains: to provide our customers with quality products and superior service." In addition to that mission, the company maintains a business philosophy that relies on strong product knowledge.

"Because we know our products," explains Stickler, "we are able to offer warranties backed by the Depco guarantee–even on used items. And, as our clients will attest, we are a 'hands-on' company, committed to building relationships based on trust. Factor in our extensive product inspection process, The Depco Way, and our 100% customer satisfaction assurance, and you'll see why our customers keep coming back."

To succeed in this industry, he adds, "You need to know your customer and what it takes to keep them satisfied."

In addition to expanding its product offerings over the past 20 years, Depco has also been expanding its customer base by exporting its products all over the world since 1991. Foreign markets are "very important" to the firm's success notes Stickler. "Foreign markets fill the gaps when our domestic markets are depressed."

Despite this strategy, the recent recession has made just as much of an impact on Depco as any other U.S. company, says

### Depco Serves a Diverse, Global Clientele

Depco exports power systems to over 150 countries around the world to service a diverse clientele that includes:

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- Farms and ranches
- Hospitals and churches
- Portable housing
- Schools and universities
- Construction contractors
- Airports
- Oil, gas, and petrochemical companies
- Factories, refineries and water wells
- Government municipalities, utilities and power plants
- Workboats, marine construction fishing industry firms
- Disaster recovery
- Engineering firms
- Engine/generator dealers and power rental companies
- Dredging, mining and drilling contractors

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**Look for a Review of the EGSA Annual Spring Convention in the next issue of *Powerline*.**

## Inspecting, Testing and Servicing "The Depco Way"

Depco shares its customers' high standards of quality. As part of the firm's commitment to providing superior customer service and reliable power equipment, Depco guarantees its products and offers a 30-day warranty on used and rebuilt inventory and a 6-month warranty on rebuilt equipment. The company says it is able to do this because of its comprehensive inspection, testing, and servicing process, a process the company calls "The Depco Way."

### Arrival, Inspection and Servicing

When a unit arrives at Depco's facility, a team of expert technicians initiates the inspection process. They thoroughly evaluate every generator set, engine, marine engine, power unit, and marine transmission for wear, identifying any faulty or defective part or component.

Units are then tuned and inspected to ensure every component will perform to factory specifications.

Once any defects have been identified, technicians replace the necessary parts so that every component functions properly. In addition, Depco mechanics change the oil and oil filters, air filters, fuel filters, and any other parts requiring service such as belts and hoses.

*The firm's testing center is equipped with a dyno facility to evaluate all engines.*

### Testing

Depco takes testing very seriously. The firm's testing center is equipped with two load banks, 750kW and 2MW, to test generator sets and a dyno facility to evaluate all engines. Depco's generators are put through rigorous load tests, during which the firm will assess a number of factors, including: unit pulls at full load; cooling system function; lube oil, fuel and base pressure and oil temperature; no oil, fuel or coolant leaks; turbo boost, voltage fluctuation and responsiveness to load changes; AC voltage, current and frequency.

All tests are performed at full capacity for a minimum of one hour. Each unit must function according to the manufacturer's specifications. If the testing process indicates further necessary repairs, the unit is sent back to the service center for additional work and then re-tested if necessary.

### Cleaning, Painting and Shipping

Depco takes pride in its work and believes the appearance of its equipment should be as excellent as the functionality. To that end, each unit is thoroughly cleaned and painted to ensure that when the customer receives it, it looks as close to new as possible.

After all servicing, testing, repairing and painting are completed, the unit is prepared for shipment anywhere in the world. This is "The Depco Way," and it is repeated it with every unit that comes through Depco's facility.

The company's web site assures clients: "Because of The Depco Way, you can buy with confidence and know exactly what you're getting at the time of purchase. We know you have high standards, and we are committed to earning your repeat business by being the best at what we do. We invite you to come by the facility and observe a load test and see our process first hand."


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Stickler. "Our sales, like those of most other companies, have suffered in today's economy. But," he adds, "We have been able to maintain a profitable business with our full staff through the tough times. The past year has been extremely tough, but we are beginning to see signs of an upturn in business. Sales over the last year were off 60%, and we hope to regain at least 50% of this margin over the coming year."

Looking forward to the new economy, Stickler sees new markets opening south. "There are huge opportunities in South America due to the current power crisis in the area," he noted.

While others are just beginning to see the opportunities, the push for greener business practices isn't anything new to Depco. "We sell used equipment," says Stickler. "The ultimate in recycling!"

## More information

For more information about Depco Power Systems, visit *www.depco.com*. or contact Tadd Stickler, Vice President, at 713-675-6100 or via e-mail at *tadd@depco.com*. ■

*From left: Jason Brackeen, Account Manager; Don Zost, Sales Manager; Hubert Rigmaiden, Account Manager; Tadd Stickler, Vice President; and Dick Davis, President.*

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# EGSA JOB BANK

### POWER GENERATION TECHNICIANS

Cummins NPower, the area's exclusive engine & power generation systems distributor for Cummins and Onan products is seeking qualified Field Service Power Generation Technicians to diagnose, troubleshoot, & repair electrical generator systems & related engine mechanical failures, & utility transfer switches & switchgears. Positions are available in Illinois, Wisconsin & North Dakota. To view all open positions visit our website, *www.cumminsnpower.com*. To apply, send a resumé via email to *npowerhr@cummins.com* or fax to 651-286-2111. EEO/AA

### Generator Field Technician

Advanced Manufacturing & Power Systems, Inc. is looking for an experienced Field Technician. We are located just 15 miles west of Daytona Beach in Deland, Florida. AMPS is a leader in packaging and distributing generator sets throughout the Caribbean. Applicants must have experience in both generator set maintenance, controls, enclosures and fuel systems. Electrical experience a plus. AMPS offers a benefit package including health, dental, vision, life and vacation benefits. If interested, please email resume to lburnham@amps.cc.

### Generator Sales

Pacific Power Products is the authorized distributor for MTU-Onsite Energy and Waukesha in Alaska, Hawaii, Washington and Oregon territory and has several opening(s) for outside salespeople. If sales is a profession that interests and motivates this could be a career opportunity that lasts a lifetime. The position is well supported with dedicated project managers and a strong inside sales team. Successful candidates will have working knowledge of power generation equipment but all applicants with a technical leaning and attitude for sales will be considered. Pacific offers a market competitive compensation package including base, car allowance, health insurance and 401K. Forward resumes to *relder@pac-power.com*

### EXPERIENCED MANAGER

An established, fast growing company in the Southern United States is seeking an **EXPERIENCED MANAGER**. Responsibilities include supervision of service managers, service sales personnel and parts departments. Strong technical background and understanding of sales, service, parts and inventory control of engine-powered products is required. Job requirements would also include reviewing bid specifications, bidding service projects, generating new service opportunities, training new sales/service employees and planning and implementing sales meetings. Candidate must have a strong understanding of all phases of the sales cycle, the ability to effectively overcome technical and business objections of prospective customers, and the ability to work multiple projects and people simultaneously. Job requirements are a BS degree or equivalent technical training or field experience in related fields. Competitive Salary and Benefits. Send resume to *J.Kellough@EGSA.org* (Reference PLND09JB-1).

### Generator Technicians

Due to our continued growth, Central Power Systems & Services, Inc. has immediate openings for Generator Technicians at several of our Missouri, Kansas and Oklahoma facilities. We offer a strong base wage and a full benefit package (including FREE MEDICAL & LIFE insurance) and PAID RELOCATION depending on skill set. Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to jobs@cpower.com. EOE

### GENERATOR SERVICE TECHNICIANS

KELLY GENERATOR & EQUIPMENT, INC., the mid-Atlantic leader in standby electrical generators is seeking experienced Generator Technicians. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region that covers Delaware, Maryland, Northern Virginia, West Virginia and Washington, DC.

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- We have an extensive Service & Parts Department to back up your work.
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- We offer medical, dental, vision, 401(k), profit sharing, short and long term disability, paid holidays, annual leave, overtime and paid "On Call."

Must have a High School Diploma (Vo-tech or GED), 3 – 5 years experience servicing industrial generator sets and associated equipment. Must be able to service, repair and troubleshoot the engine, as well as the alternator end and controls of the equipment. MILITARY A PLUS! Visit us on our website at *www.kge.com*. Fax RESUMES to 410-257-5227 or e-mail to *dkelly@kge.com*.

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KELLY GENERATOR & EQUIPMENT, INC, the mid-Atlantic leader in standby electrical generators is seeking an experienced RENTAL SALES person to join our team. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region: Delaware, Maryland, Washington DC, Northern Virginia and West Virginia.

Develop strong relationships with electrical and general contractors, home builders, event companies, industrial and commercial end users and rental houses. Focus will be on the rental (and sales) of mobile generator sets as well as renting load banks. We offer a solid base with commission, medical, dental, vision, 401(k), profit sharing and more. FAX resumes to 410-257-5227 or e-mail *dkelly@kge.com*.

### Generator Field Technician

PM Technologies, LLC has several immediate openings for Generator Technicians. We are located and operate in Michigan, Ohio and Northern Indiana. High School diploma or equivalent a must. Military experience a plus. Must be able to troubleshoot and repair the engine (diesel and gaseous) as well as the generator end. Customer interaction will be required on a daily basis. We need highly motivated, self sufficient people to assist in growing our expansion efforts at new branch locations. Benefits include company vehicle, 401k, health, dental and vision coverage's as well as paid bonuses for new account procurement. Please Fax resumes to 248.374.6408 or email to *dpopp@pmtech.org*

### Power Systems Outside Sales

D Square Energy Systems, Inc. the new Generac Industrial Dealer ( IDC )for Washington, Oregon and Northern Idaho is looking for an outside sales person for Western Washington. The successful candidate will have a demonstrated history of sales excellence in power generation and presentation to the Commercial and Industrial engineering community. Prior Generac experience a plus. This is an exciting opportunity for an independent minded seasoned rep to have a major impact in the designated territory and enjoy the resulting rewards. Send resume and salary requirements to *d2@d2energy.com* Att: Don N. Dunavant.

### Generator Sales

Genset Services, Inc. the top tier industrial distributor for Generac generators in South Florida has an opening for an outside salesperson. Candidates should have prior knowledge of emergency power equipment or experience in a similar or related field. Others with strong technical aptitude and a willingness to learn will also be considered. We offer a competitive compensation package that includes a base salary plus commission, car allowance, health insurance and 401k plan. Please forward your resume with cover letter and salary requirements to *matt@gensetservices.com*.

### Generator Field Technician-Experienced

Full-time experienced generator field technician opening in Ft. Lauderdale, FL. Requires advanced knowledge of standby generator systems with minimum 5 years experience. Working knowledge of 12 & 24 VDC controls. Company offers a full comprehensive benefits package. Competitive wage, company vehicle, laptop and cell phone for qualified candidates. Send resumes to *careers@acfpower.com* or fax to HR at 813-621-6980.

### Experienced Power Generation Associates Wanted!

Penn Power Systems, Northeast Energy Systems and Western Energy Systems, leaders in the power generation business, are seeking experienced professionals for various positions within our company. We are actively seeking experienced field service technicians in the Northeast and Western U.S. markets. Candidates should be familiar with natural gas and diesel prime movers with industry experience and knowledge of systems and controls. Penn Power Systems and its divisions offer industry competitive salaries, medical, 401(k), and vacation benefits. All interested parties should send resumes and work related history to *jobs@pennpowersytems.com* or call 1-877-736-4473. **We Proudly Employ EGSA Certified Generator Technicians**. EOE M/F/D/V

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*Continued from page 25*

- Biobutanol from corn starch complies with the 20% GHG threshold.
- Ethanol produced from sugarcane complies with the applicable 50% GHG reduction threshold for the advanced fuel category.
- Biodiesel from soy oil and renewable diesel from waste oils, fats and grease complies with the 50% GHG threshold for the biomass-based diesel category.
- Diesel produced from algal oils complies with the 50% GHG threshold for the biomass-based diesel category.
- Cellulosic ethanol and cellulosic diesel (based on currently modeled pathways) comply with the 60% GHG reduction threshold applicable to cellulosic biofuels.

In addition to finalizing a threshold compliance determination for those pathways shown above that we specifically modeled, our technical judgment indicates certain other pathways are likely to be similar enough to modeled pathways that we are also assured these similar pathways qualify. Further, for other fuels we are establishing a process whereby a biofuel producer can petition the Agency to consider whether their product would be eligible for use in complying with an EISA standard. For additional information on the lifecycle GHG emissions methodology and results for renewable fuel pathways, and details on the petition process, please refer to the Lifecycle GHG Analysis Fact Sheet, EPA420-F-10-006 or the RFS2 preamble.

## Requirements for Feedstock Producers

EISA changed the definition of renewable fuel to require that it be made from feedstocks that qualify as "renewable biomass." EISA's definition of the term "renewable biomass" limits the types of biomass as well as the types of land from which the biomass may be harvested. The definition generally applies restrictions to two feedstock sectors: the agricultural sector (planted crops and crop residues) and the non-agricultural sector (planted trees and tree residues, animal waste material and byproducts, slash and pre-commercial thinnings). These definitions affect feedstock use for production of compliant renewable fuels.

In the RFS2 rule, EPA is finalizing details applicable to renewable fuel producers which are necessary to implement this requirement. For both domestic and foreign non-agricultural sector feedstocks, renewable fuel producers can comply with specific recordkeeping and reporting requirements for their individual facilities by collecting and maintaining appropriate records from their feedstock suppliers that their feedstocks comply with the renewable biomass requirement. Producers may also, as an alternative to these individual recordkeeping and reporting requirements, opt to form a consortium to fund an independent third party to conduct annual renewable biomass quality-assurance surveys, based on a plan approved by the EPA.

For agriculturally-based feedstocks produced in the U.S., renewable fuel producers will be in compliance based on the EPA's aggregate compliance determination. The Agency will monitor agricultural land data annually and, should the baseline level of approved agricultural land be exceeded, will then require the individual recordkeeping and reporting requirements currently imposed on the non-agricultural sector. The program also provides an option for a similar, future aggregate determination for renewable fuel produced from foreign-based agricultural feedstocks, if the source region can provide sufficient data to support an effective aggregate analysis and monitoring program. Otherwise, foreign producers must verify using one of the approaches applied in the non-agricultural sector.

## For More Information

For more information on the final Renewable Fuel Standard rule (RFS2) visit *http://www.epa.gov/otaq/renewablefuels/index.htm* or contact the EPA's Office of Transportation and Air Quality, Assessment and Standards Division information line via e-mail at *asdinfo@epa.gov* or call (734) 214-4636. ■

**EGSA Job Bank Guidelines**

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. **Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a $300 fee.** Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. Please send your classified ad (limited to about 50 words) to: EGSA Job Bank, 1650 S. Dixie Hwy, Suite 400, Boca Raton, FL 33432. Or, send it via e-mail it to: *J.Kellough@EGSA.org*

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**BRANCH MANAGER**

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**Generator Set Sales/Service**

Experienced sales/service engineer needed by southern California company to sell engine generator sets.
Please respond to *J.Kellough@EGSA.org*
(Reference PLND06JB-1).

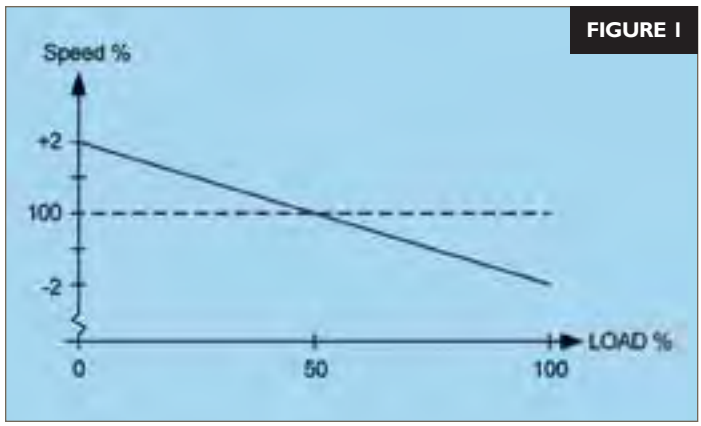
# Controlling Paralleling Generators

*By Jan Jacobsen and Philip Fulkrod, DEIF, Inc.*

When compared to the requirements of control systems from just 10 years ago, today's power management control systems greatly reduce variations in frequency and voltage, help safeguard expensive equipment and eliminate the need for utilizing speed droop.

In fact, thanks to these control system improvements, speed droop—the method of load sharing/paralleling generators where the engine speed and the frequency decrease with increasing load (see Fig. 1)—has largely fallen out of practice. Fixed or isochronous frequency has become a general requirement, but the approach may be different from system to system, due to safety and operational considerations.

FIGURE 1




*Typical speed droop curve for 4% droop reaching nominal speed at 50% load. The dashed line represents fixed speed/frequency (isochronous running)*

In a prime power application, for example, the main goal is to produce power while also keeping the equipment in good running condition, thus maximizing revenue. For this reason, the main concern is to protect the generator sets. A blackout or disconnection from the utility/main grid is regrettable but not serious, especially when the disconnection is necessary to protect the generator set(s) from damage.

However, in an emergency power application such as a hospital or data center, the primary goal is to maintain power supply. In certain situations, it is more important to maintain power supply and sacrifice the generator or tolerate poor power quality (unstable voltage and/or frequency) because a blackout could be disastrous.

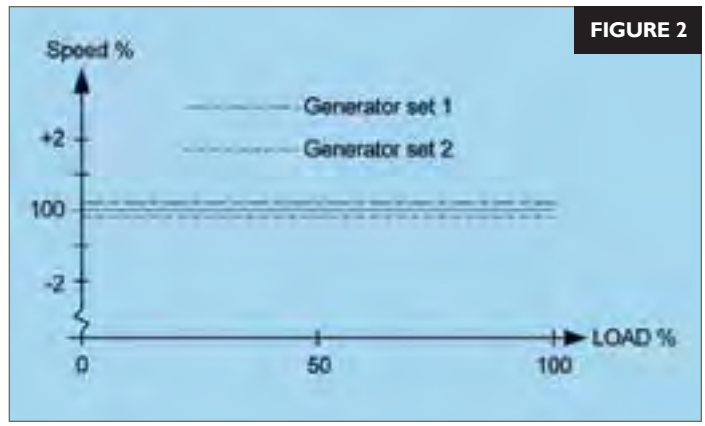
## Running without droop

Modern electronic engine controllers, such as those used for common rail diesel injection systems, and modern speed governors can easily provide a stable frequency without speed droop; they are controlled by an active Proportional Integral Derivative (PID) power controller or load sharing system. So the easy approach is to let the engines run without droop.

On systems with two or more generators, for example, if there was no droop and no load sharing–digital or older, analog technology–the generators would, at best, not share load equally. At worst, they would become oscillatory and would likely trip out on overcurrent or reverse power.

The reason for this is the difference in engine and engine controller characteristics, specifically nominal speed/frequency (see Fig. 2). However small the difference may be between nominal speed/frequency, it is always present, and it will cause the generators to "run away" from each other or the grid. Paralleling with stiff grids is tricky, too. A "stiff" grid is one that doesn't droop, so your best bet is to run in a power regulated mode, e.g. base load, import, or export control. For this reason, a fast-reacting load sharing/power control system is needed. Virtually any modern system

FIGURE 2




that utilizes microprocessor technology employing PID controllers can do this. The system signals the governor/engine controller using analog signals or digital communication (e.g. J1939). Discrete or relay outputs for speed raise/lower commands are normally too slow for this purpose, and if used, result in a cyclic instability.

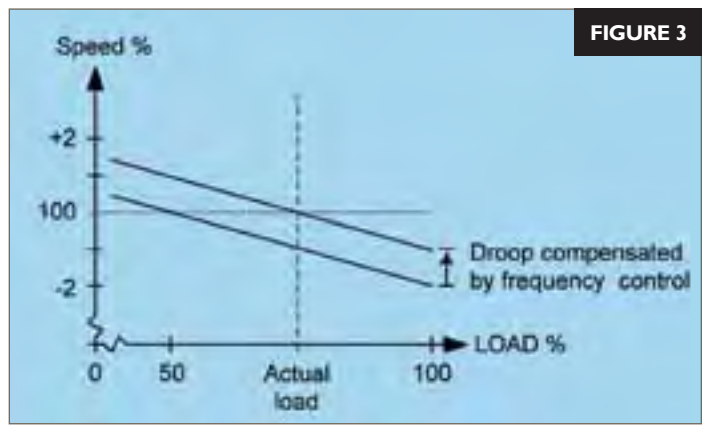
There are exceptions to running without engine speed droop. For example, if the application calls for paralleling with older droop-only systems, the choices are to run at fixed kW, add a load sharing system to the older generators, or run the new gen-set with the same droop as the older system.

## Running with engine speed droop

For certain emergency power plants, losing the active PID power controller or load sharing control, however remote, must not lead to a blackout. Therefore, droop is required to prevent a blackout from occurring as a result of loss of the load sharing system. If, on the other hand, the requirement under normal conditions is a fixed frequency regardless of power consumption, then speed droop would not be acceptable. The answer here is a combined load sharing and frequency control system. Load sharing lines with incorporated frequency control eliminates the need for droop and/or allows the droop setting to be less (see Fig. 3).

*Continued on page 35*

FIGURE 3



# Application for Membership

## ELECTRICAL GENERATING SYSTEMS ASSOCIATION

1650 South Dixie Highway, Suite 400, Boca Raton, FL 33432 • 561-750-5575 • FAX 561-395-8557
E-Mail: *e-mail@EGSA.org* • World Wide Web: *www.EGSA.org*

*Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.*

## 1. Contact Information

***Please type or print all information in upper and lower case (NOT ALL CAPS!)***

Company _

Address __

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Phone _____ FAX _____

Official Representative _____ Title _____

Representative's E-Mail _____ Company's Web Address _____

How did you hear about EGSA? ❑ Web site ❑ *Powerline* magazine ❑ Colleague ❑ POWER-GEN ❑ Other _____

Why are you joining EGSA? ❑ Certification Program ❑ CEU Program ❑ Power Schools ❑ Buying Guide Listing ❑ Other _____

## 2. Member Classification

*Read the Membership classifications below and check the box that describes your firm's classification.*

### I. FULL MEMBERSHIP

❑ MF **Manufacturer Membership**
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
2. They manufacture generators or other power conversion devices producing electricity.
3. They manufacture switchgear or electrical control devices.
4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.

❑ DD **Distributor/Dealer Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.

❑ CI **Contractor/Integrator Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.

❑ MR **Manufacturer's Representative Membership**
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.

❑ EM **Energy Management Company Membership**
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.

❑ **Associate Full Membership** *(mark appropriate category at right)*
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates.

### II. ASSOCIATE REGULAR MEMBERSHIP

❑ AA **Trade Publication Membership**
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership–Trade Publications.

❑ AB **Trade Association Membership**
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership–Allied Associations.

❑ AC **Engineer Membership**
Any consulting or specifying engineer may apply for Associate Membership–Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AD **End-User Membership**
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership–User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AE **Service Membership**
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership–Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.

❑ AG **Educational Institution Membership**
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership–Education Institution.

❑ AR **Retiree Membership**
Any individual who retires from a member company may apply for Associate Membership–Retired. This classification does not apply to any individual who is employed more than 20 hours per week.

❑ AF **Student Membership**
Any individual currently enrolled at an academic institution may apply for Associate Membership–Student.

## Dues Schedule (Use for Section 3)

| | Annual Dues | Initiation Fee | TOTAL |
|---|---|---|---|
| Manufacturer | $825 | ~~$200~~ | $825 |
| Distributor/Dealer | $285 | ~~$100~~ | $285 |
| Contractor/Integrator | $285 | ~~$100~~ | $285 |
| Manufacturer's Rep | $285 | ~~$100~~ | $285 |
| Full Associate Member | $285 | ~~$100~~ | $285 |
| Energy Management Companies | $200 | ~~$200~~ | $200 |
| Regular Associate Member | $200 | ~~$100~~ | $200 |
| Retiree Member | *Complimentary* | ~~$0~~ | $0 |
| Student Member | *Complimentary* | ~~$0~~ | $0 |

*Initiation Fee Waived Through 3/31/10!*

**NOTE:** A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

**FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.**

## 3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues $_____

Membership Plaque (optional)** $ 39.95**

*On-Site Power Reference Book* (optional)** $ 125.00**

**Florida Residents**: Add 6.5% Sales Tax to ** items $_____

*Continental US Residents add $5 shipping/handing to**items. Non Continental US Residents should call EGSA Headquarters for shipping charges for **items.* **TOTAL** $_____

## 4. Payment Method (Payable in US$ drawn on U.S. bank, U.S. Money Order, or American Express)

❑ Check #_____ Amount Due $ _____

❑ Money Order

❑ Mastercard ❑ Visa ❑ American Express

Card # _____ Exp. Date _____

Signature: _____

Print Name: _____

## 5. Products/Services

Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

_____

_____

_____

_____

_____

_____

Do you buy AND sell equipment? ❑ Yes ❑ No Do you manufacture packaged equipment? ❑ Yes ❑ No

### Available Codes:

01 --- Batteries/Battery Chargers
02 --- Control/Annunciator Systems
29 --- Education
30 --- Emission Control Equipment
04 --- Enclosures, Generator Set
05 --- Engines, Diesel or Gas
06 --- Engines, Gas Turbine
07 --- Engine Starters/Starting Aids
08 --- Filters, Lube Oil, Fuel or Air
28 --- Fuel Cells
03 --- Fuel Tanks and Fuel Storage Systems
09 --- Generator Laminations
10 --- Generator Sets
11 --- Generators/Alternators
12 --- Governors
13 --- Heat Recovery Systems
14 --- Instruments and controls, including meters, gauges, relays, contactors, or switches
15 --- Load Banks
16 --- Motor Generator Sets
17 --- Radiator/Heat Exchangers
18 --- Relays, Protective or Synchronizing
19 --- Silencers/Exhaust Systems/Noise Abatement
20 --- Solenoids
21 --- Swtichgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
22 --- Trailers, Generator Set
23 --- Transformers
24 --- Uninterruptible Power Supplies
25 --- Vibration Isolators
26 --- Voltage Regulators
27 --- Wiring Devices or Receptacles

### Enter codes here:

**Products sold:** _____

_____

**Products rented:** _____

_____

**Products serviced:** _____

_____

## 6. Sponsor(s)

: A"Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name _____ Company Name _____

## 7. Official Representative's Authorization

Signature _____ Date _____

*Continued from page 32*

In a load sharing application, if the control system fails, the frequency will vary with the load (increasing load results in decreasing frequency). When a generator is paralleled with the utility/main grid, power production will remain constant provided the utility frequency is constant. Even with a slight variance in utility frequency, the generator will remain connected but power production will vary slightly (increasing frequency results in decreasing power).

Another advantage of running with engine speed droop is the ease of PID control adjustment. Speed droop helps stabilize the system, making precise tuning of the PID controls less critical since the entire system is less sensitive. However, as with systems that run without droop, there are exceptions to systems running with droop. One drawback is the unavoidable short-time frequency change with a step change of the load (see Fig. 4). The settling time will be longer for systems using speed droop than for those without.

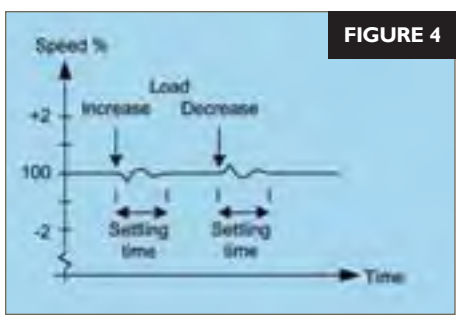



**FIGURE 4**

## Conclusions

Regardless of whether you consider fixed frequency (isochronous system) or power available at all times to be the highest priority, generator sets with speed droop can be used to meet your needs, provided the generator control system provides combined power/load sharing and frequency control.

In addition, the use of advanced power management systems with integrated active PID power controllers and load sharing provides much greater flexibility and ease of operation over systems running with load sharing only. These types of modern systems minimize the chance for system instability and allow the application to take full advantage of today's advanced microprocessor controllers with digital load sharing, improved reliability, optimized engine run-time, and greater efficiencies resulting in lowered fuel costs. ■

# INDUSTRY NEWS

## ABB to Acquire Jokab Safety

ABB has announced it will acquire 100 percent of the shares in Jokab Safety International AB for an undisclosed amount. The transaction is expected to be completed in March, subject to customary regulatory approvals.

Founded in Sweden in 1988, Jokab Safety develops innovative products and solutions for machine safety. The company has around 120 employees worldwide, with a presence in Sweden, USA, Canada, Italy, China, France and UK.

"This investment is fully in line with our strategy to broaden our offering through value-creating acquisitions," said Tom Sjökvist, head of ABB's Low Voltage Products division, under which Jokab Safety will reside. "Through this acquisition, both ABB and Jokab will strengthen their total offering. Together, we can meet customers' increasing requirements for low-voltage products and machine safety in a better way."

With the acquisition, ABB's North American operations will add around 50 new employees, bringing extensive machine safety expertise into the company.

"We are pleased to have acquired one of the market's strongest product portfolios within machine safety for manufacturing industries. It means that we can now also provide safety products on top of our already broad product range within low voltage," said Kirk Goins, Region Division Manager, Low Voltage Products in North America.

ABB is a leading developer of power and automation technologies. For more information visit *www.abb.com.*

## ASCO Power Receives Prestigious Frost & Sullivan Award

Frost & Sullivan has conferred its 2009 North American Transfer Switch Company of the Year Award on ASCO Power Technologies. The global research and consulting services firm singled out ASCO "pioneering power transfer technology that serves as the industry's benchmark."

This is the third consecutive time that Frost & Sullivan has honored ASCO Power Technologies. The company also took Frost & Sullivan honors in 2003 and 2005 for Best Practices.

"We're very excited and proud to be recognized with such a significant award," said Armand Visioli, president of the ASCO business of Emerson Network Power.

To determine the leading company in the power transfer switch market, a team at Frost & Sullivan spent hundreds of hours interviewing end users, reviewing transfer switch performance results and speaking with industry engineers. The process included in-depth discussions on issues driving and restraining the total market, revenue forecasting, market and technology trends, distribution channel analysis and a thorough competitive analysis. Challenges facing the total transfer switch market and strategies that can help overcome these issues also were discussed.

Frost & Sullivan's Best Practices Awards identify exemplary achievements within a multitude of industries and functional disciplines. The analysis on best practices identifies companies, products, processes and executives that have achieved world-class performances. For more information visit *www.AscoPower.com.*

## Chillicothe Metal Co. Recertifies to ISO 9001:2008

Chillicothe Metal Co., Inc. (CMCO), a leading manufacturer of enclosures, fuel tanks, and packaging services for over 46 years, has announced that the company has been recertified by an independent registrar for the latest revision of the ISO 9000 Standard, ISO 9001:2008.

ISO 9000 is maintained by ISO, the International Organization for Standardiza-

*Continued on page 38*

# Stay on Top of Your Game with EGSA's Electrical Generator Systems Technician Certification Program

Think things move pretty fast in today's business world? Think how fast they'll be moving one, five or even 10 years down the road. That's why you need every advantage to stay on top.

It's no secret that technology is becoming more complex—not less—and that makes today's On-Site Power Generation System a lot more expensive. End-users—your customers—don't want just anybody with a basic knowledge of mechanics to install and maintain their equipment. They want to be confident that all work has been performed by qualified personnel. Suppliers want assurance that skilled technicians are performing maintenance and repairs to guard against unnecessary returns or warranty repairs.

## As good as your word

In the past, your word was the only assurance that your technicians are skilled and knowledgeable. But now, through EGSA's Electrical Generator Systems Technician Certification Program, there is a way that you can back up those words with objective evidence of your technicians' proficiency.

EGSA offers you a big advantage: For the first time in our industry, we have an objective and accurate way to determine generator technician proficiency. That means that the same standards will be used to measure the skills and knowledge of technicians from Maine to Manitoba and Mexico. Yes, Manitoba and Mexico! EGSA has determined that there is no reason why the test could not be fairly applied to any NAFTA technician.

## What are the benefits?

For the Employer, certification helps ensure that your technicians have the critical knowledge and skills to succeed in their jobs. And everyone will be comfortable knowing that your certified technicians' expertise has been confirmed by *the* industry organization through a program that was developed by a university. Encouraging and helping your technicians become certified signifies your commitment to the highest of standards. Plus, it lends an added level of credibility to your firm and can sharpen your competitive edge. Employing certified technicians will promote customer satisfaction and you won't have to be shy about offering assurance that your technicians are qualified. Certification can also help you select potential new hires, analyze job performance, evaluate employees and motivate technicians to enhance their skills and knowledge.

Think about the message that certification sends to those with whom you do business. Why would anyone want a technician who isn't certified performing critical maintenance or repair tasks? Employing certified technicians gives you an added tool with which to market your business.

As our members have said, "We've seen too many backyard mechanics damage expensive equipment. This program will provide credibility for my company and will help build pride and a commitment from technicians to be the best."

## For the Technician

Certificate holders benefit too. Certification shows employers, clients, and associates that you are committed as a professional. It provides recognition of your knowledge and skill, shows your commitment to your profession and can help with job advancement. Certification is a mark of excellence that you carry with you everywhere you go.

Acquiring certification indicates that you have the knowledge and proficiency required to perform as an Electrical Generating Systems Technician professional. Becoming certified can increase your salary, enhance your skills, and make your job more satisfying.

*Certification helps ensure that your technicians have the critical knowledge and skills to succeed in their jobs.*

## The Certification Test

EGSA collaborated with Ferris State University to develop the certification test and program. Through a scientific process, our panel of technical experts identified 12 duty areas (such as "Basic Electricity") and 61 tasks (such as "demonstrate knowledge of AC electrical theory") within the duty areas. The duty areas and tasks were ranked and rated in terms of their relative importance, the frequency with which a task is performed, and skill level (i.e. Senior/Expert; Intermediate; and Entry Level.) All this data was combined to develop the certification test that was then statistically validated through a pilot test taken by generator technicians from across the United States.

## Who can take the Test?

**Technicians applying to take the test must have a minimum of three years of work experience as an electrical power generator equipment technician.** To be confident that they will pass the test, techs must have a comprehensive knowledge of basic electricity, the functions of a gen-set's mechanical and electrical components, the interactions and relationships among components and an understanding of various elements of the installation, service, maintenance, and repair of gen-sets and On-Site Power generation systems.

## Use the Study Guide to prepare!

Use of the program's Study Guide is an excellent way to help technicians prepare for the test and should clearly indicate if they are ready to take (and pass) the certification exam. In addition to useful formula pages, the guide contains almost 200 multiple choice practice questions that cover all parts of the certification test. In addition to identifying the correct answer, the guide also indicates in most cases why a particular choice is correct and why the others are incorrect. The Guide also identifies resource material where technicians can get additional or more in-depth information about a given topic.

Need more information? Visit us online at *www.EGSA.org* to find extensive and detailed information about the certification program. Or contact EGSA Director of Education George Rowley via e-mail at *G.Rowley@EGSA.org*.

## Certification Testing Covers:

- *Automatic Transfer Switches*
- *Communication & Documentation*
- *Engine Generator Instrumentation & Controls*
- *Multiple Generator Switchgear & Controls*
- *Troubleshooting System Problems*
- *Auxiliary Support Systems*
- *Basic Electricity*
- *Prime Movers*
- *Governors*
- *Voltage Regulators*
- *Generators/Alternators*

## Disclaimer of Liability

*Certified status is an indication that an individual has completed a combination of defined education, experience or examination requirements. However, Certification is not a guarantee or assurance of the competence or ability of any particular individual. Further, given the rapid changes in the field, the Electrical Generating Systems Association cannot warrant that the Examination and other Certification materials will at all times reflect the most current state of the art. The Electrical Generating Systems Association disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the Certification Program or the acts or omissions of any person who has been Certified by the Electrical Generating Systems Association. In conducting the Certification Program, including issuing Certifications, the Electrical Generating Systems Association is not undertaking to render professional or other services for or on behalf of any person or entity, nor is the Electrical Generating Systems Association undertaking to perform any duty owed by any person or entity to someone else. Anyone using the services of a person who has been Certified should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.*

**Electrical Generating Systems Association**
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Boca Raton FL 33432
561-750-5575 • Fax: 561-395-8557
Visit us online at *www.EGSA.org*

tion, and is a family of standards for quality management systems administered by accreditation and certification bodies. The internationally accepted ISO 9000 series of standards were written to provide a consistent basis for understanding requirements relating to product and service quality and to provide guidelines to assist organizations in implementation and operation of quality management systems. The ISO 9001 quality management system at CMCO is focused on the principles of customer satisfaction and continuous improvement through a systematic approach that involves all employees of the company.

An accredited Registrar conducted comprehensive audits of the key processes and procedures in place at CMCO to verify compliance to the ISO standard. The company earned the ISO 9001:2008 upgrade after the audits yielded proof of standard compliance. CMCO has held continuous ISO 9001 certification since 2002.

Founded in 1963, Chillicothe Metal Co., Inc. (CMCO) offers custom packaging for on-site power generation, compressor, pumping systems and specialty equipment. For information, visit *www.cmcousa.com*

## President Obama Increases Ocean Renewable Funding

The Ocean Renewable Energy Coalition reports that President Obama's FY'2011 Budget proposal includes $40.5 million in funding for marine and hydrokinetic renewable energy—an increase of $10.5 million over the $30 million proposed by the President in FY'2010. The $40.5 million budget request includes marine and hydrokinetic (MHK) system testing, MHK device and component design and development, as well as some feasibility studies for capacity and efficiency upgrades at conventional and non-powered dams.

"This is a clear example of our executive and legislative branches beginning to align their priorities in support of ocean renewable technologies. Power captured from waves, tides, ocean currents and thermal differentials, are poised for commercial application in the U.S." stated Sean O'Neill, President of the Ocean Renewable Energy Coalition. "It makes sense to generate power from local renewable resources—and our waves and tides place electricity generation near the largest population centers where clean, renewable power is greatly needed. Moreover, diversity of energy supply resources remains the foundation for a reliable energy portfolio. The ocean renewable community salutes the President's leadership and his vision of our future energy needs." he added.

For more information visit *www.ocean-renewable.com.*

## Caterpillar Introduces Tier 4 Interim GenSet Technology Portfolio

Caterpillar Inc. has introduced a portfolio of technologies designed to meet Tier 4 Interim emissions regulations for mobile and stationary generator sets. "Building on a legacy of diesel engine expertise, we are ready to meet the next phase of emissions compliancy," said William J. Rohner, Vice President of Caterpillar Electric Power Division.

Beginning January 1, 2011, the U.S. Environmental Protection Agency (EPA) will introduce the next phase of its Tier 4 emissions control regulations, which significantly limit emissions of oxides of nitrogen (NOx), particulate matter (PM), hydrocarbons (HC) and carbon monoxide (CO). These regulations affect the majority of non-road mobile equipment powered by diesel engines greater than 130 bkW, including mobile generator sets. Stationary diesel engines, such as those used in standby and prime power generator sets, are regulated separately, but to similar standards as non-road mobile equipment. However, the challenges facing the electric power industry are unique in a number of areas, particularly above 900 bkW, where the regulations focus on reducing NOx emissions from generator sets by 90 percent, compared to a 45 percent reduction for other equipment types.

Caterpillar has developed three different engine-integrated technology packages which can be used, in combination, to address the various emission reduction levels required by the EPA regulations. The technologies have been developed to provide optimal performance while minimizing impact on generator set cost, space requirements and maintenance hours.

Caterpillar is a leading manufacturer of construction and mining equipment, diesel and natural gas engines and industrial gas turbines. For more information visit *www.cat-electricpower.com.*

## Wärtsilä Reports Successful Operation of Landfill Gas Fuel Cell

Wärtsilä has announced that it has completed the first phase of a program to validate a solid oxide fuel cell unit running on landfill gas. The unit has been operating for more than 1500 hours producing electricity with extremely low emissions to households in Vaasa, Finland.

According to the EU's climate and energy package, Finland is expected to increase its share of renewable sources from the present 28 per cent to 38 per cent of energy production by 2020.

The Wärtsilä FC20 (WFC20) fuel cell power unit runs on methane-rich gas, originating from a nearby landfill and is based on planar solid oxide fuel cell (SOFC) technology supplied by Topsoe Fuel Cell A/S of Denmark.

According to Wärtsilä, the project has met its main project targets: demonstrated energy efficiency has reached very high levels, exhaust gas emissions are extremely low, and the unit has been able to operate consistently despite the low and fluctuating methane content within the landfill gas. The fuel cell unit produces an electric output of approximately 20 kW, which is enough to power approximately 10 households in the area. The thermal output of the unit ranges from 14 to 17 kW.

The varying composition of the methane rich gas from the landfill has been one of the main engineering challenges for the test site, and it has led to the development of an efficient control system.

Exhaust gas emissions from the WFC20 are reported to be extremely low. The fuel cell unit does not produce any measurable levels of harmful particles, sulphur oxide (SOx), or nitrogen oxide (NOx) emissions, even at part load conditions. When using bio-gas as fuel, $CO_2$ emissions are reported to be close to carbon neutral.

The development of fuel cell technology is a part of Wärtsilä's long-term product development, aimed at supplementing the company's product portfolio. For information, visit *www.wartsila.com.* ■

# Standby for Big Power

Every Baldor generator set, standard or custom, is designed and engineered to meet the individual needs of your application. Whether it's a 2,000 kW genset to keep your industrial facility up and running, or a 30 kW generator for your remote agricultural needs, Baldor has the right products to meet your need.

Engineered to the highest performance standards and built with unmatched quality, Baldor gensets give you the power you need, when you want it.

BALDOR®
GENERATORS

**baldor.com**

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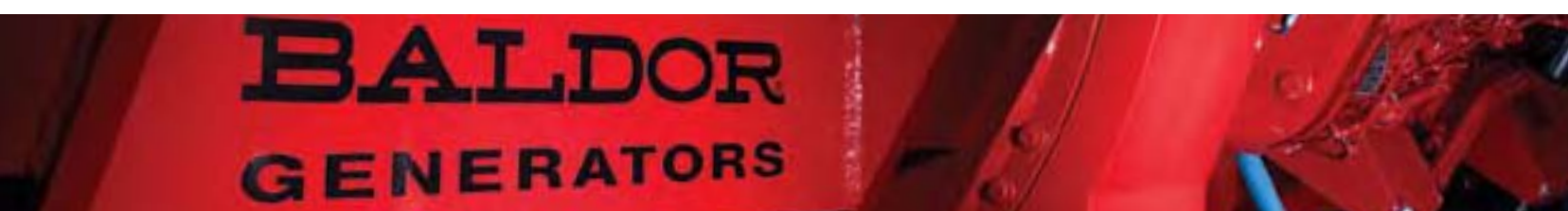

# ASCO invites you to compare power switching and controls TECHNOLOGY

## Consider the measure of innovation, design and rugged reliability

Innovative designs anticipate and satisfy your evolving power switching and controls requirements.

ASCO has developed every significant innovation in power transfer TECHNOLOGY since it debuted its first power transfer switch in 1920. Today, ASCO offers short time withstand and close on ratings to satisfy the latest NEC requirements for selective system coordination.

Every component and assembly in ASCO transfer switches have been designed exclusively for transfer switch duty.

And robust design makes the power transfer and power control systems ASCO strong. Ruggedly reliable.

Compare innovation, design and reliability. Prefer ASCO.

When it comes to cutting-edge TECHNOLOGY, superior customer SUPPORT and quality SERVICE, ASCO is second to none. ASCO—We Keep Your Power On.®

ascopower.com, (800) 800 ASCO, ascoapu.com

**ASCO Power Switching & Controls**
**Just another reason why Emerson Network Power is the global leader in enabling Business-Critical Continuity.™**

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Network Power

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